Claims Amendments

Please cancel claim 24, 32 and 33, amend claims 18, 29 and 30, and add new claims 35-38.

1-17 (Canceled)

18. (Currently amended) A process for forming nanostructures comprising the step of applying on localised regions of a smooth thin film of ~~bistable or multistable molecules~~ rotaxanes or catenanes an external mechanical perturbation with preset magnitude thereby said film undergoes a collective morphological transformation and nanostructures are formed by selforganisation of said molecules, said nanostructures having preset number, size, interspacing and shape.

19. (Previously submitted) A process according to claim 18, wherein said nanostructures are in the form of dots when said regions are one-dimensional and said nanostructures are in the form of strips when said regions are two-dimensional.

20. (Previously submitted) A process according to claim 19, wherein said dots are formed with a density, inter-dot distance or pitch and size controlled by presetting a thickness of said thin film.

21. (Previously submitted) A process according to claim 19, wherein said dots are formed in a number controlled by presetting a length of said regions.

22. (Previously submitted) A process according to claim 18, wherein the nanostructures are organised in the form of arrays of nanostructures.

23. (Previously submitted) A process according to claim 19, wherein said dots are formed and used to code and store information with areal densities of 1-1000 Gbpsi.

24. (Canceled)

25. (Previously submitted) A process according to claim 18, wherein said perturbation is applied with a scanning probe microscope (SPM).

26. (Previously submitted) A process according to claim 18, wherein the perturbation is applied with mechanical devices, millipedes or actuators able to produce

multiple local perturbations.

27. (Previously submitted) A process according to claim 18, where in said perturbation is applied with an optical microscope, or related system, a scanning confocal microscope, or photolithography setups.

28. (Previously submitted) A process according to claim 18, wherein said perturbation is applied with a rigid stamp or with a flexible stamp with which a load force is applied on said film regions, said load force being in the range of 0.1 to 100 kg/cm^2.

29. (Currently amended) A process according to claim 18, wherein said morphological transformation of said thin film is obtained by wetting/dewetting transition, dewetting introducing spatial correlation~~, particularly spinodal dewetting, crystallisation or formation of intermediate metastable structures~~.

30. (Currently amended) A process according to claim 18, wherein said molecules are selected from the group consisting of rotaxanes~~, particularly rotaxane 3,~~ and rotaxanes terminated with optically/electrically active groups and conjugated stoppers.

31. (Previously submitted) A process according to claim 18, wherein said molecules are selected from the class of catenanes.

32. (Canceled)

33. (Canceled)

34. (Previously submitted) A process according to claim 18, wherein said thin film is deposited on a substrate or is grown on a substrate form solution, or from vapour phase, or from reactive precursors, or by sublimation.

35. (New) A process according to claim 29, wherein said morphological transformation of said film is obtained by spinodal dewetting, crystallisation or formation of intermediate metastable structures.

36. (New) A process according to claim 30, wherein said rataxane is rotaxane 3.

37 (New) A process for forming nanostructures comprising the step of applying on

localised regions of a smooth thin film of rotaxanes or catenanes an external perturbation with preset magnitude thereby said film undergoes a collective morphological transformation and nanostructures are formed by selforganisation of said molecules, said nanostructures having preset number, size, interspacing and shape, the external perturbation being selected from the group consisting of a mechanical perturbation, a thermal perturbation, a thermo-mechanical perturbation, a perturbation made with light or combinations thereof.

38. (New) A process for forming nanostructures comprising the step of applying on localised regions of a smooth thin film of rotaxanes or catenanes an external perturbation with preset magnitude thereby said film undergoes a collective morphological transformation and nanostructures are formed by selforganisation of said molecules, said nanostructures having preset number, size, interspacing and shape, the external perturbation being a mechanical perturbation applied with a scanning probe microscope (SPM) or with mechanical devices, millipedes or actuators able to produce multiple local perturbations.